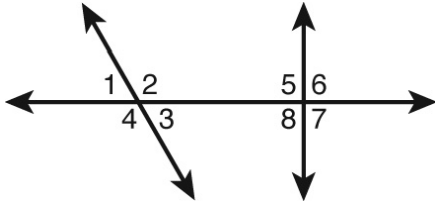


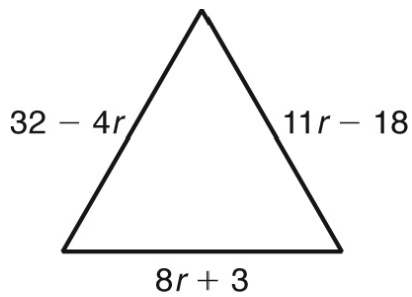
**Geometry Chapter 7 Practice Test**

\_\_\_\_\_ **1** Identify the kind of angle pair represented by  $\angle 4$  and  $\angle 6$ .



- A) alternate interior angles  
B) alternate exterior angles  
C) corresponding angles  
D) same-side interior angles

\_\_\_\_\_ **2** The perimeter of the triangle is 122 feet.



not drawn to scale

Classify the triangle according to its sides.

- A) scalene  
B) equilateral  
C) isosceles  
D) right

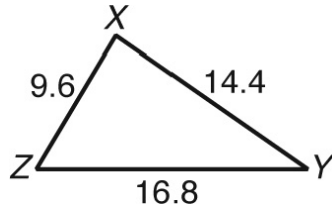
\_\_\_\_\_ **3** Two angles of a triangle measure  $29^\circ$  and  $43^\circ$ . What is the measure of the third angle?

- A)  $18^\circ$   
B)  $28^\circ$   
C)  $78^\circ$   
D)  $108^\circ$

- \_\_\_\_\_ 4 Mark wants to use coordinate proof to determine whether or not the diagonals of a square are congruent. Which coordinates could Mark use to represent the square?

A)  $(0, 0), (a, 0), (0, a), (b, b)$       C)  $(0, 0), (a, a), (b, b), (c, c)$   
B)  $(0, 0), (a, 0), (0, b), (-a, b)$       D)  $(0, 0), (-a, 0), (0, a), (-a, a)$

- \_\_\_\_\_ 5 Which list shows the angles in order from greatest measure to least measure?

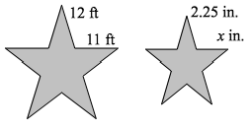


A)  $\angle X, \angle Y, \angle Z$       C)  $\angle Y, \angle X, \angle Z$   
B)  $\angle X, \angle Z, \angle Y$       D)  $\angle Y, \angle Z, \angle X$

- 6  $\overline{AB}$  is a midsegment of  $\triangle ECD$ . Point  $A$  is on  $\overline{EC}$ , and point  $B$  is on  $\overline{CD}$ . Determine whether the two triangles formed are similar. If so, write the similarity ratio and a similarity statement.

- 7 The scale for a blueprint is 1 : 50. What is the length on the blueprint for a bathroom wall that is 150 inches long?

- 8 A star-shaped garden has the dimensions shown. A scale drawing of the garden has the dimension shown. Find  $x$  to the nearest hundredth of an inch.



- 9 Give an example of a transformation that is NOT a similarity transformation.

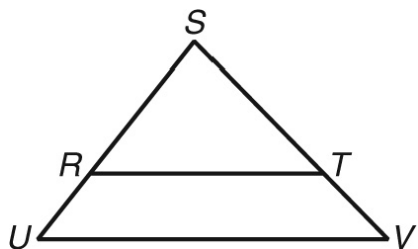
- 10 Describe the dilation  $D: (x, y) \rightarrow \left( \frac{7}{8}x, \frac{7}{8}y \right)$ .

- 11 Tell how polygon  $E(5, 0)$ ,  $F(9, 4)$ ,  $G(7, 2)$ ,  $H(0, -1)$  was mapped to polygon  $J(12, 6)$ ,  $K(18, 12)$ ,  $L(15, 9)$ ,  $M(4.5, 4.5)$ .

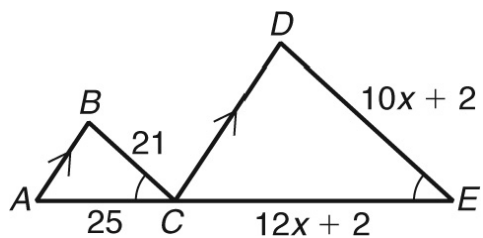
Name: \_\_\_\_\_

ID: A

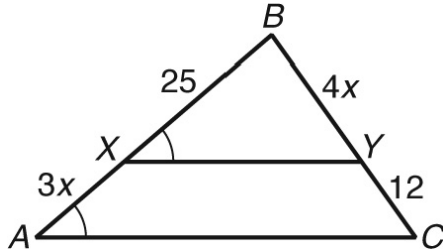
- 12** Given:  $SE = 2RU$  and  $ST = 2TV$ .  
Prove:  $\triangle USV \sim \triangle RST$



- 13** Find  $DE$ .



- 14 Find  $AX$ .



- 15 One side of a triangle is 5 centimeters longer than twice another side. The ray bisecting the angle formed by these sides divides the opposite side into 6- and 15-centimeter segments. Find the perimeter of the triangle.
- 16 To find the height of a billboard, a student placed a mirror on the ground 13 meters from its base. The student was 14.5 meters from the billboard before being able to see the top of the billboard in the mirror. If the student's eye level is approximately 1.8 meters, how tall is the billboard?
- 17 A landscaper is making a scale drawing of a rectangular courtyard. The courtyard is 10 yards by  $13\frac{1}{3}$  yards. If the landscaper uses a scale of 1 in : 4 ft, what should be the length of and width of the drawing?

Name: \_\_\_\_\_

ID: A

- 18**  $\triangle RST$  has vertices  $R(1,1)$ ,  $S(4,1)$ , and  $T(3,3)$ . Two vertices of  $\triangle XYZ$  are  $X(0,-1)$  and  $Y(6,-1)$ . Find two different locations for vertex  $Z$  so that  $\triangle RST \sim \triangle XYZ$

- 19** **Given:**  $\triangle ABC$  has vertices  $A(-2,1)$ ,  $B(-1,3)$ , and  $C(2,0)$ .  $\triangle DEF$  has vertices  $D(-4,0)$ ,  $E(-2,-4)$ , and  $F(4,2)$ .  
**Prove:**  $\triangle ABC \sim \triangle DEF$

## Geometry Chapter 7 Practice Test Answer Section

**1** ANS: B PTS: 1 DIF: 2 TOP: Cumulative Test, Chapter 7  
MSC: DOK 1

**2** ANS: C PTS: 1 DIF: 2 TOP: Cumulative Test, Chapter 7  
MSC: DOK 2

**3** ANS: D PTS: 1 DIF: 2 TOP: Cumulative Test, Chapter 7  
MSC: DOK 2

**4** ANS: D PTS: 1 DIF: 2 TOP: Cumulative Test, Chapter 7  
MSC: DOK 2

**5** ANS: B PTS: 1 DIF: 2 TOP: Cumulative Test, Chapter 7  
MSC: DOK 2

**6** ANS:  
Yes;  $\frac{2}{1}$ ;  $\triangle ECD \sim \triangle ACB$

PTS: 1 DIF: 2 NAT: NT.CCSS.MTH.10.9-12.G.SRT.5  
TOP: Chapter 7 Free Response Test, Form C MSC: DOK 2

**7** ANS:  
3 in.

PTS: 1 DIF: 2 TOP: Chapter 7 Free Response Test, Form C  
MSC: DOK 2

**8** ANS:  
2.06 in.

PTS: 1 DIF: 2 TOP: Chapter 7 Free Response Test, Form C  
MSC: DOK 2

**9** ANS:  
Possible answer:  $M: (x,y) \rightarrow (ax,by)$  where  $a$  and  $b$  are constants and  $a \neq b$ .

PTS: 1 DIF: 2 TOP: Chapter 7 Free Response Test, Form C  
MSC: DOK 1

**10** ANS:  
“dilation with center  $(0,0)$  and scale factor  $\frac{7}{8}$ ”

PTS: 1 DIF: 2 TOP: Chapter 7 Free Response Test, Form A  
MSC: DOK 2

**11** ANS:  
Possible answer: first translate:  $(x,y) \rightarrow (x+3,y+4)$  and then dilate:  $(x,y) \rightarrow (1.5x,1.5y)$

PTS: 1 DIF: 2 NAT: NT.CCSS.MTH.10.9-12.G.CO.2  
TOP: Chapter 7 Free Response Test, Form C MSC: DOK 3

12 ANS:

Statements	Reasons
1. $SR = 2RU$ , $ST = 2TV$	1. Given
2. $\frac{SR}{RU} = 2$ , $\frac{ST}{TV} = 2$	2. Division Prop. of =
3. $\frac{SR}{RU} = \frac{ST}{TV}$	3. Trans. Prop. of =
4. $\angle S \cong \angle S$	4. Reflex.. Prop. of =
5. $\triangle USV \sim \triangle RST$	5. SAS ~

PTS: 1 DIF: 2

NAT: NT.CCSS.MTH.10.9-12.G.SRT.4 | NT.CCSS.MTH.10.9-12.G.SRT.5

TOP: Chapter 7 Free Response Test, Form C

MSC: DOK 3

13 ANS:

42

PTS: 1 DIF: 2

NAT: NT.CCSS.MTH.10.9-12.G.SRT.5

TOP: Chapter 7 Free Response Test, Form C

MSC: DOK 2

14 ANS:

15

PTS: 1 DIF: 2

NAT: NT.CCSS.MTH.10.9-12.G.SRT.5

TOP: Chapter 7 Free Response Test, Form C

MSC: DOK 2

15 ANS:

56 cm

PTS: 1 DIF: 2

NAT: NT.CCSS.MTH.10.9-12.G.SRT.5

TOP: Chapter 7 Free Response Test, Form C

MSC: DOK 2

16 ANS:

15.6 m

PTS: 1 DIF: 2

TOP: Chapter 7 Free Response Test, Form C

MSC: DOK 2

17 ANS:

width =  $7\frac{1}{2}$  in.; length = 10 in.

PTS: 1 DIF: 2

TOP: Chapter 7 Free Response Test, Form C

MSC: DOK 2

18 ANS:

 $Z(4,3)$  and  $Z(4,-5)$ 

PTS: 1 DIF: 2

NAT: NT.CCSS.MTH.10.9-12.G.SRT.5

TOP: Chapter 7 Free Response Test, Form C

MSC: DOK 2



19 ANS:

$$AB = \sqrt{[-1 - (-2)]^2 + (3 - 1)^2} = \sqrt{5}$$

$$AC = \sqrt{(-2 - 2)^2 + (1 - 0)^2} = \sqrt{17}$$

$$BC = \sqrt{(-1 - 2)^2 + (3 - 0)^2} = 3\sqrt{2}$$

$$DE = \sqrt{[-4 - (-2)]^2 + [0 - (-4)]^2} = 2\sqrt{5}$$

$$DF = \sqrt{(-4 - 4)^2 + (0 - 2)^2} = 2\sqrt{17}$$

$$EF = \sqrt{(-2 - 4)^2 + (-4 - 2)^2} = 6\sqrt{2}$$

$\frac{AB}{DE} = \frac{\sqrt{5}}{2\sqrt{5}} = \frac{1}{2}$ ,  $\frac{BC}{EF} = \frac{3\sqrt{2}}{6\sqrt{2}} = \frac{1}{2}$  and  $\frac{AC}{DF} = \frac{\sqrt{17}}{2\sqrt{17}} = \frac{1}{2}$ . So all three corresponding sides are proportional. Therefore,  $\triangle ABC \sim \triangle DEF$  by **SSS**~.

PTS: 1

DIF: 2

NAT: NT.CCSS.MTH.10.9-12.G.SRT.4 | NT.CCSS.MTH.10.9-12.G.SRT.5

TOP: Chapter 7 Free Response Test, Form C

MSC: DOK 3